

WHAT IS CLAIMED IS:

1. A method of allocating a number N of available display slots on a Web page among a plurality of different sources of display items, said method comprising:

- 5 (a) defining, for each source of display items, a candidate set of items to be displayed;
- (b) selecting display items from a pool of all candidate sets of display items, in a manner that normalizes the probability that the items of any one candidate set will be selected in relation to the items of the other candidate sets; and
- (c) inserting up to N of the selected items in the available display slots of the Web
- 10 page.

2. The method recited in claim 1, further comprising periodically repeating (a) through (c).

3. The method recited in claim 1, further comprising:

- 15 (d) defining a plurality of different levels of source participation, each source being associated with one level and each level having one or more sources associated with it;
- (e) performing (a) through (c) separately for the sources at each level of participation, thereby selecting a number of display items at each level; and
- 20 (f) selecting a predefined number of display items from said selected items at each level and assigning the predefined number of display items of each level to respective display slots on the Web page in a manner that gives preference to one level of source participation relative to another.

25 4. The method recited in claim 3, wherein if there are not enough display items at a given level to select said predefined number of display items, then said method further comprises assigning display slots that otherwise would have been assigned to the display items of that level instead to the display items at the highest other level of participation having available items to fill those slots.

5. The method recited in claim 3, wherein if there are not enough display items among all of the levels of source participation to fill the available display slots on the Web page, then said method further comprises filling the unfilled display slots with display items selected from sources outside of said predefined levels of source participation.

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6. The method recited in claim 1, wherein (b) further comprises:
(b1) weighting the items in each candidate set to normalize the probability that items from any one candidate set will be selected from the pool of all candidate sets, thereby providing a normalized pool of candidate sets, and

10 (b2) randomly selecting said items from the normalized pool of candidate sets.

7. The method recited in claim 1, wherein (b) further comprises (b1) randomly selecting one of the candidate sets, (b2) selecting one item from the selected candidate set, (b3) reducing a count of the display items of the selected candidate set by one and removing that candidate set from further consideration when the count reaches zero; and (b4) repeating (b1) through (b3) until a desired number of display items have been selected.

8. The method recited in claim 7, wherein (b2) comprises randomly selecting one item from the selected candidate set.

9. The method recited in claim 7, wherein (b2) comprises selecting one item from the selected candidate set in accordance with a weighting of items applied to the selected candidate set.

10. The method recited in claim 9, wherein (a) comprises defining, for each source of display items, a candidate set of items to be displayed, each candidate set of items having at least a first subset and a second subset, each subset having a count associated therewith of the number of display items in that subset, and wherein (b2) and (b3) are performed first on the first subset of display items until the count for that subset reaches zero, and then on the second subset, the

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candidate set being removed from further consideration only after the counts of both subsets reach zero.

11. The method recited in claim 10, wherein each candidate set comprises two or more subsets, and wherein (b2) and (b3) are performed, in turn, on each successive subset until the counts of all of the subsets reach zero.

12. A computer-readable medium having computer-executable instructions which when executed by a computer cause the computer to allocate a number N of available display slots on a Web page among a plurality of different sources of display items, said instructions causing the computer to:

- (a) define, for each source of display items, a candidate set of items to be displayed;
- (b) select display items from a pool of all candidate sets of display items, in a manner that normalizes the probability that the items of any one candidate set will be selected in relation to the items of the other candidate sets; and
- (c) insert up to N of the selected items in the available display slots of the Web page.

13. The computer-readable medium recited in claim 12, wherein said instructions further cause the computer to periodically repeat (a) through (c).

14. The computer-readable medium recited in claim 12, wherein said instructions further cause the computer to:

- (d) define a plurality of different levels of source participation, each source being associated with one level and each level having one or more sources associated with it;
- (e) perform (a) through (c) separately for the sources at each level of participation, thereby selecting a number of display items at each level; and
- (f) select a predefined number of display items from said selected items at each level and assigning those selected display items to respective display slots on the Web page in a manner that gives preference to one level of source participation relative to another.

15. The computer-readable medium recited in claim 14, wherein if there are not enough display items at a given level to select said predefined number of display items, then said instructions further cause the computer to assign display slots that otherwise would have been assigned to the display items of that level instead to the display items at the highest other level of participation having available items to fill those slots.

16. The computer-readable medium recited in claim 14, wherein if there are not enough display items among all of the levels of source participation to fill the available display slots on the Web page, then said instructions further cause the computer to fill the unfilled display slots with display items selected from sources outside of said predefined levels of source participation.

17. The computer-readable medium recited in claim 12, wherein (b) further comprises:

(b1) weighting the items in each candidate set to normalize the probability that items from any one candidate set will be selected from the pool of all candidate sets, thereby providing a normalized pool of candidate sets, and

(b2) randomly selecting said items from the normalized pool of candidate sets.

18. The computer-readable medium recited in claim 12, wherein (b) further comprises (b1) randomly selecting one of the candidate sets, (b2) selecting one item from the selected candidate set, (b3) reducing a count of the display items of the selected candidate set by one and removing that candidate set from further consideration when the count reaches zero; and (b4) repeating (b1) through (b3) until a desired number of display items have been selected.

19. The computer-readable medium recited in claim 18, wherein (b2) comprises randomly selecting one item from the selected candidate set.

20. The computer-readable medium recited in claim 18, wherein (b2) comprises selecting one item from the selected candidate set in accordance with a weighting of items applied to the selected candidate set.

21. The computer-readable medium recited in claim 20, wherein (a) comprises defining, for each source of display items, a candidate set of items to be displayed, each candidate set of items having at least a first subset and a second subset, each subset having a count associated therewith of the number of display items in that subset, and wherein (b2) and (b3) are performed first on the first subset of display items until the count for that subset reaches zero, and then on the second subset, the candidate set being removed from further consideration only after the counts of both subsets reach zero.

22. The computer-readable medium recited in claim 21, wherein each candidate set comprises two or more subsets, and wherein (b2) and (b3) are performed, in turn, on each successive subset until the counts of all of the subsets of that set reach zero.

23. A Web page having a number of display items from different sources located in at least some of N available display slots of the Web page, the Web page having been generated in accordance with the following method:

- (a) defining, for each source of display items, a candidate set of items to be displayed;
- (b) selecting display items from a pool of all candidate sets of display items, in a manner that normalizes the probability that the items of any one candidate set will be selected in relation to the items of the other candidate sets; and
- (c) inserting up to N of the selected items in the available display slots on the Web page.

24. The Web page recited in claim 23, wherein the method for generating the Web page further comprises:

- (d) defining a plurality of different levels of source participation, each source being associated with one level and each level having one or more sources associated with it;

(e) performing (a) through (c) separately for the sources at each level of participation, thereby selecting a number of display items at each level; and

(f) selecting a predefined number of display items from said selected items at each level and assigning the predefined number of display items of each level to respective display slots on the Web page in a manner that gives preference to one level of source participation relative to another.

25. The Web page recited in claim 24, wherein if there are not enough display items at a given level to select said predefined number of display items, the method of generating the Web page further comprises assigning display slots that otherwise would have been assigned to the display items of that level instead to the display items at the highest other level of participation having available items to fill those slots.

26. The Web page recited in claim 24, wherein if there are not enough display items among all of the levels of source participation to fill the available display slots on the Web page, the method of generating the Web page further comprises filling the unfilled display slots with display items selected from sources outside of said predefined levels of source participation.

27. The Web page recited in claim 23, wherein (b) further comprises:
(b1) weighting the items in each candidate set to normalize the probability that items from any one candidate set will be selected from the pool of all candidate sets, thereby providing a normalized pool of candidate sets, and

(b2) randomly selecting said items from the normalized pool of candidate sets.

28. The Web page recited in claim 23, wherein (b) further comprises (b1) randomly selecting one of the candidate sets, (b2) selecting one item from the selected candidate set, (b3) reducing a count of the display items of the selected candidate set by one and removing that candidate set from further consideration when the count reaches zero; and (b4) repeating (b1) through (b3) until a desired number of display items have been selected.

29. The Web page recited in claim 28, wherein (b2) comprises randomly selecting one item from the selected candidate set.

30. The Web page recited in claim 28, wherein (b2) comprises selecting one item from the selected candidate set in accordance with a weighting of items applied to the selected candidate set.

31. The Web page recited in claim 30, wherein (a) comprises defining, for each source of display items, a candidate set of items to be displayed, each candidate set of items having at least a first subset and a second subset, each subset having a count associated therewith of the number of display items in that subset, and wherein (b2) and (b3) are performed first on the first subset of display items until the count for that subset reaches zero, and then on the second subset, the candidate set being removed from further consideration only after the counts of both subsets reach zero.

32. The Web page recited in claim 31, wherein each candidate set comprises two or more subsets, and wherein (b2) and (b3) are performed, in turn, on each successive subset until the counts of all of the subsets reach zero.